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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,290	08/23/2006	Takeo Tokiai	294806US0PCT	6806
22850 7590 11/29/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER STANLEY, JANE L				
ART UNIT 1767		PAPER NUMBER		
NOTIFICATION DATE 11/29/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/590,290

Applicant(s)

TOKIAI, TAKEO

Examiner

JANE L. STANLEY

Art Unit

1767

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS-08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 20100929

DETAILED ACTION

Applicant's reply filed **9 September 2010** has been fully considered. As per Applicant's filed claim amendments **claims 1-2 and 4-9** are pending, wherein: **claim 1** has been amended, **claims 2 and 5-6** are as originally filed, **claims 4 and 7-9** are as previously presented and **claim 3** has been cancelled.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on **29 September 2010** was filed after the mailing date of the non-final action on **9 March 2010**. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-2 and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egawa et al. (US 6,261,474) in view of Kaneko et al. (US 5,801,132).

Regarding claim 1-2 and 4-7, Egawa et al. teaches a lubricating oil comprising a refrigerant and a polyvinyl ether compound having units (a) represented by (I) $-(CH_2-C(OR)H)-$ or a polyvinyl ether having units of (a) and units of (b) represented by (I') $-(CH_2C(OR')H)-$ wherein R represents a hydrocarbon group with 1 to 3 carbon atoms, R' represents a hydrocarbon group with 3 to 20 carbon atoms (abstract) and wherein the

mol ratio of (a) to (b) is in the range of 10:0 to 5:5 (col 5 ln 51-55). As such Egawa teaches a polyvinyl ether comprising units of (a) only (instant q is zero; instant $p/(p+q)$ is 0.1 or more, where $q = \text{zero i.e. } p/p$). Egawa et al. also teaches that R in formula (I) can include methyl (col 5 ln 11-14, ln 44-45) (instant R^5 is methyl). It is also noted that Egawa et al. teaches the polyvinyl ether having one end structure represented by (II) $\text{H}-\text{CH}_2\text{CH}(\text{OR}^1)-$ and the other end structure represented by (III) $-\text{CH}_2\text{CH}(\text{OR}^2)\text{H}$, wherein R^1 and R^2 represent hydrocarbon groups with 1 to 20 carbons (col 6 ln 38-65).

Egawa et al. teaches the refrigerant to be pentafluoroethane (abstract) and does not specifically teach a C1-C8 hydrocarbon compound. However, Kaneko et al. teaches compositions comprising similar polyvinyl ether polymers (col 2 ln 46; col 4 ln 4-38; col 5 ln 46-52; col 7 ln 12-19 and 27-33) and refrigerants (col 15 ln 53 to col 16 ln 13). Kaneko et al. teaches hydrofluorocarbons including pentafluoroethane (col 15 ln 62) and hydrocarbons such as propane, cyclopropane, butane, isobutane and pentane (col 16 ln 5-6) to be refrigerant equivalents. Kaneko et al. and Egawa et al. are analogous art because they are both concerned with the same field of endeavor, namely refrigerant oil compositions comprising a base oil and a refrigerant. In view of the recognition by Kaneko et al. that hydrofluorocarbon refrigerants and the aforementioned hydrocarbon refrigerants are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art to substitute the hydrofluorocarbon with a hydrocarbon refrigerant and thereby arrive at the present invention. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the

prior art, the substitution of one equivalent for another is not patentable (See *In re Ruff* 118 USPQ 343 (CCPA 1958; MPEP 2144.06).

Egawa et al. does not specifically teach that the mixture viscosity of the refrigerating oil composition is 0.1 mm²/s or more, or 0.5 mm²/s or more when measured at 90 °C and 2.3 MPa. However, Egawa et al. teaches that the polyvinyl ether compound has a kinematic viscosity of 5 to 200 cSt at 40 °C (col 7 ln 13-23). Egawa et al. is silent as to the pressure at which the measurement(s) was/were obtained. However, as the polyvinyl ether base oil and refrigerant made obvious by Egawa et al. in view of Kaneko et al. are the polyvinyl ether and hydrocarbon claimed, it is implicit that the polyvinyl ether base oil and refrigerant would have this property, absent evidence to the contrary.

Egawa et al. does not specifically teach that the solubility of the refrigerant (instant component A) in the base oil (instant component B) is 40 mass% or less, 2 to 40 mass%, 2 to 30 mass% or 5 to 25 mass% when measured at 40 °C and 1.2 mPa. However, as the polyvinyl ether base oil and refrigerant made obvious by Egawa et al. in view of Kaneko et al. are the polyvinyl ether and hydrocarbon claimed, it is implicit that the polyvinyl ether base oil and refrigerant would have this property, absent evidence to the contrary.

Regarding claim 8, Egawa et al. in view of Kaneko et al. makes obvious the composition set forth above. Egawa et al. further teaches the average molecular weight of the polyvinyl ether compound is from 150 to 2,000 (col 7 ln 18-19).

Regarding claim 9, Egawa et al. in view of Kaneko et al. makes obvious the composition set forth above.

Egawa et al. does not specifically teach the polyvinyl ether compound (instant component B) to have an oxygen atom content of 10 mass% or more. However, Egawa et al. teaches a 150 to 2,000 MW polyvinyl ether with units (a) only, formula (I), wherein R is a hydrocarbon with 1 to 3 carbons, including methyl. There exists a plurality of situations in which the polyvinyl ether of Egawa et al. will intrinsically have an oxygen atom content of 10 mass% or more.

Response to Arguments

The objection to **claim 3** is withdrawn as a result of Applicant's cancellation of the claim.

The 35 U.S.C. 103(a) rejection of **claims 1-9** as unpatentable over Egawa et al. (US 6,261,474) in view of Kaneko et al. (US 5,801,132) is maintained. Applicant's arguments have been fully considered (see Remarks pages 4-7) but were not found persuasive.

Regarding Applicant's summary of instant claim 1 (see Remarks pages 4-5), the Examiner notes that instant claim 1 recites that q can be zero and as such including units of $-(CH_2C(OR^6)H)_q-$ is optional. Egawa teaches a polyvinyl ether compound having units (a) represented by (I) $-(CH_2-C(OR)H)-$ or a polyvinyl ether having units of (a) and units of (b) represented by (I') $-(CH_2C(OR')H)-$ wherein R represents a hydrocarbon group with 1 to 3 carbon atoms. As such Egawa obviates a polyvinyl ether comprising

only units of (a) wherein R is a hydrocarbon group with 1 to 3 carbon atoms and can be methyl (col 5 ln 11-14, ln 44-45). The properties of (i) and (ii) recited in claim 1 are deemed inherent/intrinsic to the compounds and the combination thereof as based on a 103(a) rejection of a combination of two references (see above). Applicant must provide evidence of record demonstrating that such would not be the case. Applicant's assertion that both R^5 = methyl and R^6 = ethyl are required by the instant claim 1 is not commensurate with the claims as currently written and is therefore not persuasive.

Applicant points to Examples 3 to 5 and to Comparative Example 3 of the instant specification and directs attention to Table 3. The Examiner notes that the data to which Applicant appears to be referring is found in Table 4 and not Table 3. Applicant's arguments are not found commensurate with the instant claims. It is noted that Pro. Ex. 4-7 (see Table 2), which correspond to the B material of Ex. 3-5 and Comparative Example 3 of Table 4, are B materials wherein R^3 and R^4 are hydrogen only and wherein q is a positively recited integer greater than zero (excluding comparative example 3 directed to ethyl vinyl ether groups only). The instant claim, as currently written, recites additional options for R^3 and R^4 and that q can be zero. Egawa obviates a polyvinyl ether comprising only units of (a) wherein R is a hydrocarbon group with 1 to 3 carbon atoms and can be methyl (col 5 ln 11-14, ln 44-45).

As asserted by Applicant, the "larger the number of carbon atoms in the substituents corresponding to R^5 and R^6 in formula (II) of claim 1, the greater the solubility of the refrigerant in the base oil of respective refrigerating oil compositions" (Remarks page 6). Applicant's examples (see Table 4) demonstrate that a polyvinyl

ether having both methyl and ethyl units, R⁵ and R⁶ respectively, meets the claimed solubility limitations (see also Applicant's arguments page 6). Taken together it appears intrinsic that a polyvinyl ether having only methyl units, such as taught by Egawa, would necessarily result in a base oil (B) such that the refrigerant (A) will have a solubility in B of 40 mass% or less at 40 °C and 1.2 MPa.

Regarding Egawa, it is noted that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments (see MPEP 2123; see *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.); see *Upsher-Smith Labs. v. PamLab, LLC*, 412 F.3d 1319, 1323, 75 USPQ2d 1213, 1215 (Fed. Cir. 2005)). Furthermore, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (see *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)).

The Examiner again notes that Kaneko was not relied upon to teach component (B). Applicant's repeated arguments to the base oils taught by Kaneko (see Remarks pages 6-7) constitutes bodily incorporation, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In pointing out that Kaneko teaches polyvinyl ether base oils, the Examiner was merely demonstrating the manner(s) in

which Kaneko and Egawa constitute analogous teachings. Both Kaneko and Egawa teach combining similar polyvinyl ether base oils and refrigerants. The rejection **was not** based upon substitution of the base oil of Kaneko with the base oil of Egawa as asserted by Applicant (see Remarks page 7). It is noted that in the above set forth rejection Egawa was used as the *primary* reference and Kaneko was used as the *secondary* reference. This argument is not commensurate with the rejection as set forth and is not found persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE L. STANLEY whose telephone number is

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(571)270-3870. The examiner can normally be reached on Mon.-Thurs. 7:30 am - 5 pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JLS/

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1767